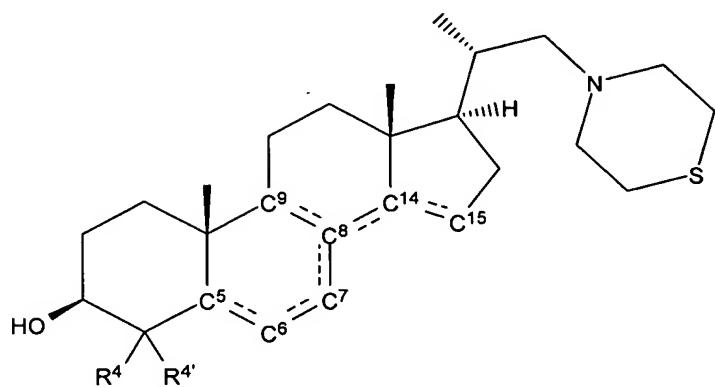
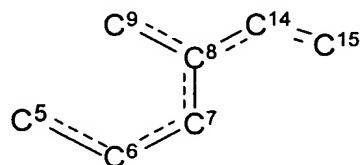


## 5 Claims:

1. A thiomorpholino steroid compound of general formula **I**

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**I**wherein in the moiety **I'** of compound **I**

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**I'**

each bond between C<sup>5</sup> and C<sup>6</sup>, between C<sup>6</sup> and C<sup>7</sup>, between C<sup>7</sup> and C<sup>8</sup>, between C<sup>8</sup> and C<sup>9</sup>, between C<sup>8</sup> and C<sup>14</sup> and between C<sup>14</sup> and C<sup>15</sup>, independently, is a single bond or a double bond, at least one of these bonds being a double bond, with the proviso that there is no double bond in the steroid skeleton

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exclusively between C<sup>5</sup> and C<sup>6</sup>, and

wherein

5 R<sup>4</sup> and R<sup>4'</sup> independently, are selected from the group, comprising hydrogen and methyl.

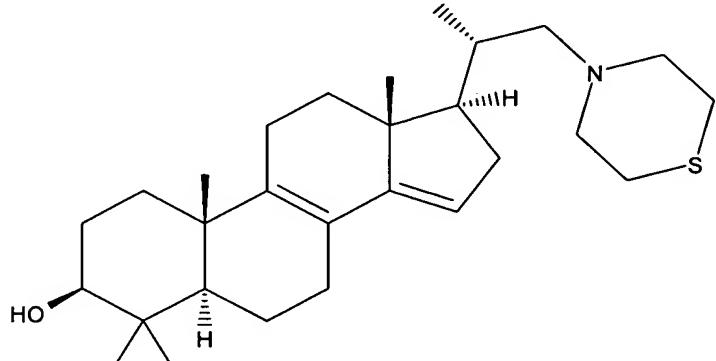
2. The steroid compound according to claim 1, wherein in the moiety with general formula I' one double bond is present between C<sup>8</sup> and C<sup>14</sup> or two double bonds are present between C<sup>8</sup> and C<sup>9</sup> and between C<sup>14</sup> and C<sup>15</sup> or two double bonds are present between C<sup>5</sup> and C<sup>6</sup> and between C<sup>7</sup> and C<sup>8</sup>.

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3. The steroid compound according to any one of claims 1 and 2, being selected from the group comprising:

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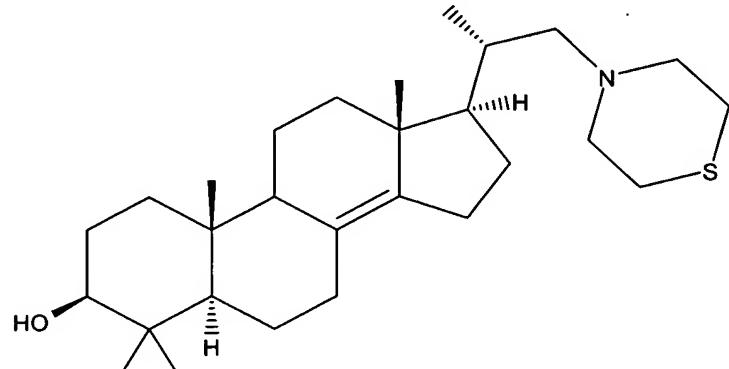
(20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-5 $\alpha$ -pregna-8,14-dien-3 $\beta$ -ol:



IA

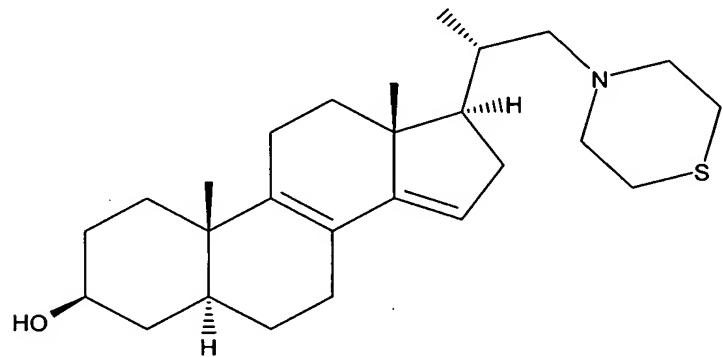
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(20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-5 $\alpha$ -pregna-8(14)-en-3 $\beta$ -ol:

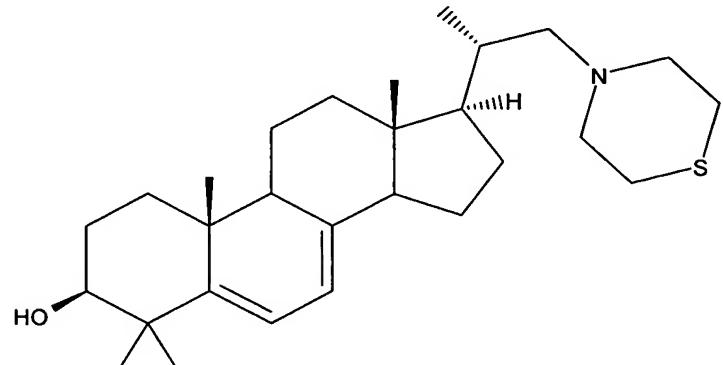
**IB**

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(20S)-20-[(thiomorpholin-4-yl)methyl]-5 $\alpha$ -pregna-8,14-dien-3 $\beta$ -ol:

**IC**

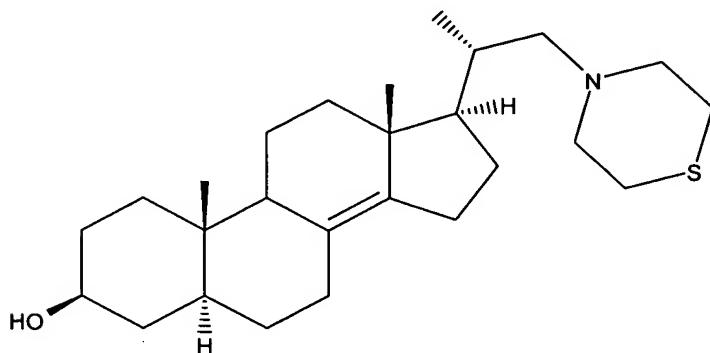
(20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-pregna-5,7-dien-3 $\beta$ -ol



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**ID**

(20S)-20-[(thiomorpholin-4-yl)methyl]-5 $\alpha$ -pregna-8(14)-en-3 $\beta$ -ol:



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**IE.**

4. A pharmaceutical composition comprising at least one thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3 and at least one pharmaceutically acceptable excipient.
5. The pharmaceutical composition according to claim 4, wherein the steroid compound of general formula **I** is comprised in an effective amount.
6. A use of the thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3 to the preparation of a pharmaceutical composition being useful to regulate reproduction, especially meiosis.
7. The use according to claim 6 for non-*in vivo* use.
8. A use of the thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3 to the preparation of a contraceptive or of a profertility drug.

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9. A method of regulating reproduction, especially meiosis, comprising administering to a subject in need of such a regulation an effective amount of at least one thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3.

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10. A method for improving the possibility of an oocyte's ability to develop into a mammal, comprising contacting an oocyte removed from the mammal with the thiomorpholino steroid compound according to any one of claims 1 - 3.

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11. A method for the preparation of (20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-5 $\alpha$ -pregna-8,14-dien-3 $\beta$ -ol, comprising

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- a) starting from (20S)-20-hydroxymethyl-pregna-4-en-3-one;
- b) introducing two alkyl groups in C<sup>4</sup> by alkylation;
- c) reducing the keto group to a hydroxy group;
- d) protecting the resulting hydroxy group with an acyl group;
- e) introducing a  $\Delta^7$  double bond by bromination/dehydrobromination;
- f) isomerizing the dien  $\Delta^{5,7}$  to the dien  $\Delta^{8,14}$  by heating in the presence of acid;
- g) oxidizing the 17-hydroxy group to an aldehyde group;
- h) reductively aminating the aldehyde group with thiomorpholine and removing the acyl group by reduction reaction

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12. The method according to claim 11, wherein the acyl group is a benzoate group.